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Kimberly Schaefer

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The Effects of Instant Messenger on the Undergraduate Experience

By

Kimberly Schaefer

Honors Thesis

In

*Department of Rhetoric and Communication Studies
University of Richmond
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Advisor: Dr. Scott Johnson

Abstract

The use of Instant Messenger (IM) by American undergraduate students has grown rapidly over the past decade. As a result, IM has come to play an important role in the collegiate experience and daily life of today's undergraduate students. This study explores the effects of IM's growing popularity upon the academic efforts, relationships, and daily living habits of undergraduate students through an analysis of data obtained from surveys and focus groups at a small private university. The research concludes that students perceive IM to be a distraction, decreasing productivity; however, these disadvantages do not affect student IM-use, and IM is seen as increasing student connection.

“I don’t know what I would do on campus without IM. My entire social life is basically planned through it: what I do on the weekends, when my study group meets, who I eat with. It’s all planned on IM” (focus group participant).

“Instant messaging (IMing) allows users to be informed when friends and family are online to chat through text windows that appear on the screens of the two parties involved” (Gross, Juvonen, & Gable, 2002, p. 77). Instant Messenger (IM) enables the most immediate trade of brief, private, individualized text messages over the Internet between two users who are online concurrently (Laguarda, 2004). Instant messaging offers two functions unique to computer-mediated communication (CMC): the ability to know who is connected to IM, and the ability to conduct a text-based conversation in real time. The latest IM software features audio and video components as well. IM has proven to be one of the most popular online applications, resulting in dramatically increased Internet connection. Instant Messenger has fostered a sense of online community that perhaps no other application has done (Alvestrand, 2002). Some reasons for Instant Messenger’s popularity may be that this form of communication is inexpensive compared to other forms of media, such as the telephone (Grinter & Eldridge, 2001). Beyond economic benefits, some of the attributes of IM also contribute to its acceptance. Instant Messenger may be administered in one-on-one or in group communication settings, nearly combining features of the telephone, e-mail, and chat rooms into one (Nardi, Whitaker, & Bradner, 2000).

Research has shown that communication technologies are not replacing face-to-face (FTF) communication (Walther, 1992); however, the Internet has become an integral part of college life, and not just for studying. Therefore, college students may be more affected by IM than other populations. According to a survey released by the Pew

Internet & American Life Project (Jones & Madden, 2002), college students are among the heaviest users of IM in the United States. The survey of college students across the country found that 86% use the Internet, compared with 59% of the overall US population. Additionally, out of the fifty-three million American adults on Instant Messenger, college Internet users are heavier users of IM than those in the overall online population (Shiu & Lenhart, 2004). Furthermore, Shiu and Lenhart (2004) also found that college Internet users are twice as likely as the average Internet users to use IM on any given day and that 85% of college students consider the Internet an easy, convenient choice for communicating with friends. The study also found that 72% of college students reported that most of their online communication is with friends. These statistics show that college students actively utilize IM more than the overall US population.

Instant messaging has become so popular that for one-fifth of American teenage Internet users, instant messaging has become the primary means of contacting friends (Jones & Madden, 2002). Among young Americans, instant messaging services are more popular than chat rooms (Herring, 2004). The popularity of instant messaging is also growing globally. For example, in Spain, 49% of Internet users have IM (Greenspan, 2003).

Although there has been little scholarly research on Instant Messenger and college students, previous research has shed light on the growing phenomenon. A recent study found that 32 percent of college students in Hong Kong chat on "I Seek You" (ICQ - the first instant messaging system available on the World Wide Web) on a daily basis with a mean time of two hours and ten minutes (Leung, 2001). Research has shown that

affection and sociability were the main motivation for college students in Hong Kong to use ICQ (Leung, 2001).

Gender differences have also been found among college students in Hong Kong and ICQ. Female ICQ users tended to chat longer and more frequently for social reasons while males spent less time socializing. Primarily, gender research found that males use ICQ to fill idle time between classes while females use ICQ to show or to seek affection and to socialize with friends (Leung, 2001). Additionally, college students with a high desire to meet new friends, express affection, and show concern for others more frequently use ICQ.

While the typical undergraduate student uses the Internet for about 100 minutes each day, Anderson (2001) identified 10 percent of college students who spend more than 400 minutes online a day compared with the average Internet user who spends 15 minutes online each day. Scherer (1997) found that 13 percent of college students fit a classification of Internet dependency.

College and University libraries are jumping on the IM trend by offering reference services over Instant Messenger. Instant messaging software products (such as AOL Instant Messenger) allow librarians to communicate in real-time with patrons (Yue, 2001). Students are able to ask librarians questions over IM instead of in a face-to-face interaction. Additionally, librarians are able to help more than one student at a time by having multiple IM conversations occurring simultaneously.

College students living away from home use IM as a way to stay in touch with family and friends (Grinter & Palen, 2002). Nardi, Whittacker, and Bradner (2000) also

found this trend among office workers. Additionally, Grinter and Palen (2002) found college students encourage their families to increase IM use.

In a recent study of teenage IM use, Grinter and Palen found that participants experienced high and continual IM use because of a desire to conform to and increase socializing opportunities with their peers. Additionally, participants reported being annoyed by IM non-users and complained of the inconvenience and additional work required to contact them (Grinter & Palen, 2002).

Multi-tasking while on Instant Messenger has become common place. For instance, Grinter and Palen (2002) found that teenagers are normally involved in multiple, concurrent IM conversations and perform another computer-based task at the same time. Similarly, Isaacs, Walendowski, and Ranganathan (2002) found that in 85.7% of IM conversations, at least one person was multi-tasking. However, research has shown that people are less productive if they are on Instant Messenger and doing another task. A study performed by Cutrell, Czerwinski, and Horvitz (2001) demonstrated that participants who received instant messages were slower overall at a certain task and needed more reminders than participants who did not receive instant messages.

Early research suggests that CMC might lead to unemotional or under-social communication (Kiesler, Siegel, & McGuire, 1984; Walther & Burgoon, 1992). Further research has shown that the lack of relational cues in CMC makes it low in social presence in comparison with face-to-face communication. Lower social presence seems to make messages more impersonal (Walther & Burgoon, 1992).

Other researchers suggest that CMC users rely on alternative signals in the absence of nonverbal cues (Walther, 1996; Walther & Burgoon, 1992). The Social Information Processing (SIP) theory of CMC (Walther, 1992) suggests that without nonverbal cues, communicators adapt their relational behaviors with the remaining cues offered in CMC, such as content and linguistic signals (Walther & Tidwell, 1995) and typographic cues (Walther & D'Addario, 2001).

Social observations have indicated that computer-mediated communicators often develop intense relationships with high levels of intimacy (Parks & Floyd, 1996). Computer-mediated communication offers the luxury of communicating exact meaning with many different media. As CMC is increasingly used, it will create a favorable environment for more personal and intimate relationships (Soukup, 2000). Research suggests that over time, group identity and norms become prominent and guide interaction in CMC (Lea & Spears, 1995). This conclusion is also supported by Hiltz and Johnson (1990) who concluded that CMC “must be viewed as a social-technical system. Characteristics of the users and the social context of the application (cultural, group, and task characteristics) will strongly influence its acceptance and use” (p. 760). Postumes, Spears, and Lea (2000) concluded that each CMC act reflects and shapes both the collective and individual behaviors of the group and over time develop into the group's social identity.

Instant Messenger has also become popular in Corporate America. Much research has been done on the effects of Instant Messenger in the workplace. Several IM systems have been developed specifically for corporate use to enhance interactions between co-workers (Pruitt, 2003). Cameron and Webster (2005) found that IM

represents informality in the workplace and is therefore considered to be less productive and a less desired form of communication than face-to-face interaction. Conversely, IM has been found to be very useful in the workplace for reasons of immediacy, flexibility with IM, coordinating and scheduling, and keeping in touch with friends and family (Nardi, Whittacker, & Bradner, 2000). IM also proved to be more efficient for tasks requiring rapid responses because users were quicker to respond to instant messages than emails and voicemails (Nardi et al., 2000).

While there is discussion about computer-mediated communication and Instant Messenger in the workplace, there is little discussion about the effects of Instant Messenger on college students. Similarly, there is little research on how the academic life of college students in particular is affected by Instant Messenger. Therefore, with the dearth of research on Instant Messenger and undergraduates, this study seeks answers to the research question.

RQ: What is the role of Instant Messenger in the undergraduate experience?

Method

To address the research question, a multi-phased research study was designed involving focus groups and a survey. This research was completed in late fall 2004 and early spring 2005. It entailed assessing the views of University of Richmond undergraduate students regarding their perceptions of Instant Messenger.

Focus Groups

In fall of 2004, students at the University of Richmond were recruited to participate in focus group interviews intended to gather responses to various questions regarding the students' experiences with Instant Messenger. The focus groups were used

Instant Messenger, the anecdotal experience of friends and acquaintances of the researcher, and on information gained from the literature review. The first three questions were warm-up inquiries designed to get the participants thinking and discussing Instant Messenger. These questions were followed by questions on academics, relationships, motivation, recreation, and daily living habits. The focus groups were audio-taped and video-taped. They were then transcribed and analyzed. Using Strauss and Corbin's (1998) Open-Coding Approach, data were coded and organized into categories, then evaluated for themes and patterns.

The primary use of the focus groups was to facilitate creation of a thorough Instant Messenger questionnaire. However, many themes found in the focus groups were also found in the student questionnaire results. The results of the focus groups indicated that Instant Messenger slows down productivity, although most participants agreed that if they needed to focus then they could choose to pull themselves away from Instant Messenger or turn it off. Interestingly, students do not seem to mind that IM decreased productivity. Further, while all the participants acknowledged that they talk to their friends on Instant Messenger, most indicated that they did not want to talk about serious issues over IM. They pointed to the lack of verbal and nonverbal cues as increasing the difficulty of talking about important matters on Instant Messenger. All participants indicated that Instant Messenger makes students more dependent on their computers. The results indicated that its convenience, fast use, and effectiveness are advantageous for college life.

Student Survey

Sample

A random sample of 1000 currently enrolled students at the University of Richmond was generated from the university's Registrar's Office. Students from all undergraduate academic classes were included. Participants were not compensated for completing the survey. Participation was completely voluntary and all information given by the participants was confidential and anonymous. Of the 1000 students invited to participate, 303 completed the survey. Three responses were excluded due to errant or insincere responses. The final sample of 300 (for a 30% response rate) included 184 (61%) females, 116 (39%) males, ranging in age from 18 to 23 years old with a mean of 20.02 years.

Survey Questions

To examine the research question, surveys were distributed to 1000 students from the university via email. The survey questions were intended to assess student perceptions of Instant Messenger in the undergraduate experience. The questions were divided into three areas: academics, relationships, and daily living habits. Every survey consisted of the same questions and students read the cover page for the survey before they agreed to voluntarily participate. The cover page informed the participants that the survey was about "Instant Messenger and the undergraduate experience." Since the survey was administered via email, there was no way for participants to sign a consent form. Therefore, students consented by completing and submitting the survey online. A follow-up email was sent to all 1000 participants 4 days after the first email as a reminder to complete the survey.

The three different areas of the survey were selected because they encompass primary aspects of IM-use in the college experience (Leung, 2001). The primary goal of

the survey questions was to examine the perceptions of participants across these three areas as they consider their own and others' use of Instant Messenger. The format of the 120-question survey included 5 point likert items and ranking questions derived and refined as previously described, and took approximately 25-30 minutes to complete. A copy of the survey questions, consent form, and follow-up email can be found in Appendix B.

Procedure

For ease of completion, the survey was administered via the Internet. All members of the randomly generated sample of current students from the university's Registrar's Office were emailed the survey and asked to participate. The participants could then complete the survey in a comfortable setting instead of in a classroom or a laboratory where their surroundings could have influenced their responses. The participants submitted their results online to a computer database which stored the data. Neither the email addresses nor any information that would allow the researcher to know the identities of the participants accompanied the submitted surveys. Once the surveys were complete, the data were coded and entered in SPSS statistical software where they were analyzed.

Results

Academics

Participants scored their responses to most of the 120 survey items using a Likert scale (1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly disagree) or using ranking (1 to 5, with 5 being highest). ANOVA's were run examining the difference between low users (0-4 hours per day) and high users (4 or more hours per

day), and between males and females on relevant items. Participants were asked several questions regarding three areas of IM and academic use, including productivity levels, distraction and interference with academics, and usefulness. Overall, there was little gender difference found across all items and the differences found were insignificant and sporadic.

Productivity

Participant means for the four items related to productivity were 2.31 (IM makes students less productive, $SD = .975$), 1.30 (productivity levels drop when IM is on during study time, $SD = .859$), 2.69 (IM cuts down on the amount of time students have to study, $SD = .965$), and 2.96 (students choose computer based schoolwork over other types because of IM, $SD = .974$). Overall these means range from strongly agree to neutral.

One-way ANOVA yielded a significant difference [$F(1, 284) = 11.50, p < .001$] between low IM users ($M = 1.90, SD = .855$) and high IM users ($M = 2.40, SD = .980$) on the perception that IM makes students less productive. A one-way ANOVA also produced a significant difference [$F(1, 283) = 4.678, p < .05$] in the perception of productivity levels between low users ($M = 1.06, SD = .818$) and high users ($M = 1.35, SD = .866$).

Distraction

Participants means for the four items related to distraction were 1.99 (IM on while studying is a distraction, $SD = .891$), 3.66 (the more time a student spends on IM, the lower the student's GPA is likely to be, $SD = .922$), 2.69 (IM cuts down on the amount of time students have to study, $SD = .965$), and 2.17 (IM users leave IM running while studying because they want to be distracted, $SD = .826$).

One-way ANOVA yielded a significant difference [$F(1, 283) = 8.915, p < .005$] between low IM users ($M = 1.67, SD = .766$) and high IM users ($M = 2.07, SD = .902$) on the perception that having IM on while studying is a distraction. Additionally, a one-way ANOVA also produced a significant difference [$F(1, 284) = 27.447, p < .0001$] in the perception that the more time spent on IM, the lower a student's GPA is likely to be between low users ($M = 3.08, SD = .977$) and high users ($M = 3.79, SD = .859$). However, it should be noted that there was no significant difference between low and high users on reported grade point average.

Usefulness

Participant means for three items related to usefulness were 2.56 (IM is valuable for academic use, $SD = .886$), 1.91 (students use IM to get information about class from other students, $SD = .654$), and 3.80 (IM creates an environment where students want to study, $SD = .754$). A one-way ANOVA yielded a significant difference [$F(1, 283) = 4.869, p < .03$] between low IM users ($M = 2.10, SD = .700$) and high IM users ($M = 1.88, SD = .640$) on the perception that students use IM to get information about class from other classmates.

Relationships

Participants were asked several questions regarding three areas of relationships and Instant Messenger, including who undergraduates talk to on IM, if IM strengthens or weakens relationships, and the value of IM in comparison to other forms of communication media in relationships.

Who Participates in IM

The first category dealt with who undergraduates talked with on IM. Participants perceived IM to be the primary form of communication between classmates outside of the classroom ($M = 2.50$, $SD = 1.137$). Participants were invited to rate their perception of IM as a primary medium of communication for undergraduates in five types of relationships (classmates, cyber friends, family, friends, significant others). Significant differences were found among all five types of relationships (See Table 1). Participants, using a paired-sample t -test comparison, rated IM highest as a primary medium of communication in their relationships with classmates ($M = 2.50$, $SD = 1.137$), scoring between agree and neutral. Friends ($M = 2.83$, $SD = 1.174$), followed by cyber friends ($M = 3.03$, $SD = 1.021$), were rated next. Participants indicated disagreement that IM is a primary means of communication with both significant others ($M = 3.77$, $SD = 1.019$) and family ($M = 4.11$, $SD = .928$). Additionally, participants were asked to rate their perception that IM increases undergraduates' contact with family members ($M = 2.84$, $SD = 1.009$) and friends ($M = 1.83$, $SD = .677$).

Instant Messenger and Relationships

Participants were asked to indicate for several questions the value of IM in comparison to other forms of communication media in relationships. The questions asked the participants to compare five different forms of media (email, face-to-face, Instant Messenger, phone, written) for expressing emotion, gathering and sharing information, communication for intimate relationships, convenience, ease of use, and strengthening of relationships. In all six areas, face-to-face communication was perceived to be the most effective medium.

Sharing and Expressing Emotion.

Participants were asked to rate (1 = least effective, 5 = most effective) the effectiveness of the same five types of media for sharing and expressing emotion. Paired sample *t*-tests yielded significant differences for all but one pairing (written and Instant Messenger, See Table 2). Participants indicated face-to-face communication as most effective ($M = 4.61$, $SD = 1.107$), followed by phone ($M = 3.71$, $SD = .672$), IM ($M = 2.40$, $SD = 1.106$), written ($M = 2.31$, $SD = .979$), and email ($M = 2.05$, $SD = 1.053$).

Gathering and Sharing Information.

Participants were asked to rate (1 = least effective, 5 = most effective) the effectiveness of the same five media of communication for gathering and sharing information. Paired sampled *t*-tests were run and yielded significance for all but one pairing (email and Instant Messenger, See Table 3). Participants again indicated face-to-face communication as most effective ($M = 3.82$, $SD = 1.347$), followed by email ($M = 3.35$, $SD = 1.253$), IM ($M = 3.29$, $SD = 1.202$), phone ($M = 2.95$, $SD = 1.096$), and written ($M = 1.87$, $SD = 1.291$).

Communication in Intimate Relationships.

Participants were invited to rate (1 = least effective, 5 = most effective) the effectiveness of the five media for communication in intimate relationships. Paired sample *t*-tests yielded significance for all but two pairings (email and written, and written and Instant Messenger, See Table 4). Participants indicated face-to-face communication as the most effective ($M = 3.81$, $SD = 1.802$), followed by phone ($M = 3.37$, $SD = .904$), IM ($M = 2.75$, $SD = 1.194$), written ($M = 2.65$, $SD = 1.251$), and email ($M = 2.56$, $SD = 1.268$).

Convenience.

Participants rate (1 = least convenient, 5 = most convenient) five forms of media for communication convenience. Paired sample *t*-tests yielded significance for five of the ten pairings (See Table 5). Participants indicated IM to be the most convenient overall ($M = 3.29$, $SD = 1.732$), followed by phone ($M = 3.08$, $SD = .973$), email ($M = 3.00$, $SD = 1.052$), face-to-face ($M = 2.90$, $SD = 1.136$), and written ($M = 2.74$, $SD = 1.866$).

Ease of Use.

Participants also rate (1 = least easy to use, 5 = most easy to use) the five forms of media for communication ease of use. Paired sample *t*-tests yielded significant differences for only two pairings (phone and email, and email and Instant Messenger, See Table 6). Means for the five media were identified as face-to-face ($M = 3.17$, $SD = 1.557$), IM ($M = 3.13$, $SD = 1.530$), phone ($M = 3.08$, $SD = 1.096$), email ($M = 2.91$, $SD = 1.112$), and written ($M = 2.91$, $SD = 1.729$).

Strengthening of Relationships

Finally, participant means for four items related to IM's strengthening of relationships were 2.56 (IM strengthens most social relationships, $SD = .952$), 2.88 (IM strains intimate relationships because of the lack of verbal and nonverbal cues, $SD = 1.054$), 3.16 (IM enhances undergraduates' relationships with family, $SD = 1.018$), and 2.31 (IM enhances undergraduates' relationships with friends, $SD = .871$).

Daily Living Habits

The third area of questions asked participants about undergraduates' daily living habits in relation to IM. The area covered six sets of questions. All six areas were themes found in the focus group results.

IM Use

Participant means for two items related to extensiveness of IM use were 2.11 (the average undergraduate uses IM excessively, $SD = .928$) and 1.70 (IM users typically sign on to IM when they first start up their computers, $SD = .632$). A one-way ANOVA yielded a significant difference [$F(1, 270) = 14.262, p < .0001$] between low IM users ($M = 2.00, SD = .808$) and high IM users ($M = 1.63, SD = .569$) in their perception that IM users typically sign on to IM when they first start up their computers.

IM Away Messages and Profiles

Participants were asked questions regarding IM away messages and IM profiles. The means for three items related to IM profiles were 1.54 (IM users check IM profiles often, $SD = .592$), 2.29 (IM users frequently reference their buddies' profiles to get personal information, $SD = .897$), and 2.05 (IM users do not put personal information on their profiles because they do not want people to know their personal information, $SD = .757$). The means for the four items related to IM away messages were 1.42 (IM users check away messages when they do not plan to IM anyone, $SD = .543$), 2.96 (IM users put their daily schedule on their away message to look important, $SD = 1.06$), 1.94 (IM users put their daily schedules on their away messages to let others know what they are doing, $SD = .623$), and 2.99 (IM users worry if their away messages are inaccurate, $SD = .955$). One-way ANOVA yielded significant difference [$F(1, 270) = 6.303, p < .02$] between low IM users ($M = 1.59, SD = .643$) and high IM users ($M = 1.38, SD = .513$) in their perception that IM users check away messages even when they do not plan to IM anyone. Significant difference [$F(1, 269) = 9.133, p < .003$] was also found between low users ($M = 2.54, SD = 1.091$) and high users ($M = 3.05, SD = 1.037$) in their perception that IM users put their daily schedules on their away messages to look important.

Connection

Participants were invited to answer questions regarding IM and feeling “connected.” The means for the four items related to connection were 1.96 (IM has created a subculture of student IM users, $SD = .846$), 2.95 (student non-IM users feel “left out” because they are not on IM, $SD = 1.063$), 2.80 (IM non-users do not feel as “connected” as IM users, $SD = 1.032$), and 2.00 (IM users feel disconnected when they do not have access to IM, $SD = .828$).

Instant Messenger and Security

Participants also answered questions involving IM and security. The means of the two items were 3.99 (IM users feel that “Big Brother” is watching them on IM, $SD = .780$) and 2.20 (IM would be an effective way to stalk others, $SD = .877$). A one-way ANOVA found significant difference [$F(1, 271) = 6.305, p < .02$] between low IM users ($M = 3.73, SD = .995$) and high IM users ($M = 4.04, SD = .714$) in their perception that IM users feel “Big Brother” is watching them on IM.

Favorability

Participants were invited to answer questions regarding their perception of undergraduates’ favorability toward IM. The means for the three questions were 1.90 (I like Instant Messenger, $SD = .778$), 1.78 (I am comfortable using IM, $SD = .877$), and 3.59 (I think IM is a nuisance, $SD = 1.037$). A one-way ANOVA yielded significant difference [$F(1, 270) = 21.178, p < .0001$] between low IM users ($M = 2.34, SD = .982$) and high IM users ($M = 1.80, SD = .694$) on their perception of liking IM. Significant difference [$F(1, 272) = 6.807, p < .01$] was also found between low IM users ($M = 1.06, SD = .998$) and high IM users ($M = 0.71, SD = .828$) on participants’ perception of their

comfort with IM. Additionally, a one-way ANOVA also found significant difference [$F(1, 271) = 11.350, p < .001$] between low IM users ($M = 3.14, SD = 1.099$) and high IM users ($M = 3.69, SD = 1.005$) on their perception of IM as a nuisance.

Motivation

Finally, participants answered questions regarding student motivation and IM. The means for five questions regarding motivation were 2.69 (IM users typically get less sleep than IM non-users, $SD = .986$), 3.37 (IM users typically watch more television than IM non-users, $SD = .853$), 1.63 (students use IM when they are bored, $SD = .573$), 1.64 (IM is frequently used as a procrastination tool, $SD = .609$), and 2.16 (IM users typically IM just to “chat” without a specific purpose, $SD = .753$). A one-way ANOVA yielded a significant difference [$F(1, 272) = 4.469, p < .05$] between low IM users ($M = 2.42, SD = .883$) and high IM users ($M = 2.74, SD = 1.001$) on the perception that IM users typically get less sleep than non-users. A one-way ANOVA also yielded a significant difference [$F(1, 272) = 10.468, p < .001$] between low users ($M = 3.02, SD = .958$) and high users ($M = 3.44, SD = .808$) on the perception that IM users typically watch more TV than non-users.

Discussion

The purpose of this study was to examine the effects of Instant Messenger on the undergraduate experience focusing on three areas: academics, relationships, and daily living habits. The findings from this study make it apparent that Instant Messenger is a prominent part of campus life. Even accounting for self-selection bias (i.e., the increased likelihood that IM-users would be willing to complete a survey concerning IM), having such a high percentage (83%) of high IM users (four or more hours a day) within this

sample shows how significant IM is in the undergraduate experience. This finding reveals that college students may well be on IM more each day than they watch television (Nielsen Media Research, in Bauder, 2005). The average college student watches an average of three hours and forty-one minutes of television a day, suggesting that IM is surpassing television as the medium college students are exposed to the most each day. This change in media use may have both positive and negative effects. Overall, the present research found Instant Messenger is a good way to feel connected to friends and family and helps to maintain relationships with friends and classmates. IM may also have some potential academic benefits as well. However, IM was found to be a distraction and cuts productivity.

Academics

The first set of research questions asked about students' perceptions of academics and Instant Messenger, specifically asking questions related to productivity, distraction, and usefulness. Findings indicate that students believe IM cuts down on student productivity. However, the difference between low and high users on productivity items points to IM use as a factor in determining perceptions of productivity, with low users viewing IM as a greater distraction than do high users. These findings are not all together surprising given research (Cutrell et al., 2001) demonstrating that people are less productive when they are on Instant Messenger and doing another task. Though students tend to choose to do schoolwork by their computers for IM access, students still do not have especially strong opinions regarding their perception that IM cuts down on study time.

Similar to the findings of the first research question regarding academics, students did not express a strong opinion about IM as a distraction for academics, yet there was a significant difference between the perception of low and high users, with low users more strongly agreeing that IM is a distraction, and focus group comments further suggest IM is a larger distraction than high users perceive. “I can’t do any substantial amount of work when IM is on. I just keep getting interrupted by IMs. Sometimes I have to even turn it [IM] off when I really want to get work done” (focus group participant). Such findings correlate with Cutrell et al.’s study (2001) that found participants who received IMs were slower overall at a specific task they were instructed to do and needed more reminders than participants who did not receive IMs during the task.

One possible explanation for the difference in the perception between low and high users could be that high users are unwilling to face that IM is such a distraction. Cognitive Dissonance theory (Festinger, 1957) suggests that when a person experiences dissonance, rationalization may be used as a means of coping with the dissonance. High IM users could be soothing their dissonance by perceiving IM as less distracting than is actually the case.

Findings in both the survey and focus groups suggest IM users leave IM on during study time because they want to be distracted. One comment from a focus group participant stated “studying can be such a chore that I like having the breaks when someone IMs me. It makes studying more bearable.” This could be explained by students’ desire to still feel connected while studying and their tendency to multi-task while on IM. Additionally, since IM is used so extensively on college campuses, students may not realize how distracting IM can be to their academics. With such a large

percentage of the participants (83%) using IM four or more hours a day, students may have become so accustomed to IM that they may no longer view it as a distraction, but rather as part of their daily lives. Hence, students may not realize the extent to which IM distracts them from their academics. Furthermore, focus group comments found that students who are high IM users are not necessarily engaged in instant messaging the entire time they are signed on to Instant Messenger. Instead, they will periodically check IM when they are at a computer. One focus group participant summarized her daily IM use by this statement:

Whenever I'm awake I'm signed on to IM, but I don't use it all the time. I will have an away message up when I'm out of my room or doing work so people don't IM me. I never really think about how much time I spend IMing people each day. It's in small spurts so I don't really think about it. I guess it adds up though throughout the day.

Since high users IM periodically throughout the day, they may not realize both the distraction it produces and the large amount of time actually spent IMing. This may also explain why high users showed slightly less agreement than low users with items related to productivity.

Participants had no strong opinions on the correlation between the amount of time spent on IM and a lower GPA, although there was a significant difference between low and high users, with low users indicating a more neutral position and high users tending to disagree. A possible reason for the difference in perception between low and high users could again be the issue that high IM users do not want to admit or do not perceive IM to be as great a distraction to academics or that IM is in competition with academics for students' time. However, since there was little difference between low and high users

on reported GPA, low users may perceive the time spent on IM by high users to affect their academic performance more than is the case.

The third research question concerning academics was about IM's academic usefulness. The results from the study suggest participants' responses were between agreement and neutral in their perception that IM is valuable for academic use. Also, participants agreed that students use IM to get information about class from classmates. These findings may be significant for the academic community. Since IM is a growing means of communication and so popular among undergraduates, it may be an area for academic opportunities and development such as class-specific chat rooms for courses, exchange of IM screen names to further classroom discussion, academic advising, or even professor-student online chat meetings.

Although the results do not suggest that IM creates an environment where students necessarily want to study, incorporating IM into the academic community may be a useful and relatively cheap method of furthering undergraduate learning and promoting academic discussion beyond the classroom. By better incorporating a medium that is already quite popular among undergraduates into the academic side of the college experience, students may be encouraged to continue classroom discussions and ask questions invaluable to the development of undergraduates. Instead of IM being viewed only as a distraction to academics, it could become a medium to help further the education of students.

Relationships

The second set of research questions asked about participants' perceptions of relationships and Instant Messenger, specifically focusing on six areas: who participates

in IM, sharing and expressing emotion, gathering and sharing information, communication in intimate relationships, convenience, and ease of use. Findings for the research question about IM as a primary means of communication indicated that IM is ranked highest as a medium for communication among classmates. However, students IM friends the most. This finding backs up the previously stated recommendation that Instant Messenger could be further incorporated into the academic community as a means of advancing classroom discussion. The finding that intimate partners viewed other media as more central to their relationship than IM may suggest that college students in intimate relationships prefer to communicate through media which allow for different verbal and nonverbal cues.

The present study found that while IM may be useful in maintaining family contact, it has not become for most the primary means of interaction. Previous research on family communication found that college students living away from home use IM as a way to stay in touch with family (Grinter & Palen, 2002). The increased use of cell phones seems a likely reason phones were indicated to be the primary way of communicating with family when students are away at school.

Findings for the research questions on sharing and expressing emotion suggest participants believe that IM is not the best medium for communicating emotion, perhaps because of the lack of verbal and nonverbal cues. This finding relate to the overall consensus found in the focus groups that undergraduates do not like to share important feelings over IM because of the lack of cues but prefer instead to talk about less serious issues in the casual, limited IM environment. Indeed, previous research has shown that

many people use IM at home, in private, and late at night because of the relaxed atmosphere (Hu, 2004).

Similar to the results about sharing and expressing emotion, the findings indicate that participants perceive face-to-face and email as being better communication media than IM for gathering and sharing information. However, the focus group participants indicated that they use IM as one of the key means of sharing and gaining information from other students. Even within Instant Messenger's limitations and though most may use other media more often, IM appears to be a valuable tool for sharing and gathering information.

The results from the questions about IM and intimate relationships indicate that participants do not view IM as a primary medium for relational communication. Participants perceived face-to-face and phone communication as more effective. As previously stated, the lack of nonverbal cues could be a reason why IM is not seen as effective for intimate relationships. Furthermore, face-to-face was by far perceived to be the most effective medium for communication in intimate relationships. Students may feel that intimate relationships require more work and communication than other relationships, therefore face-to-face is seen as the most effective. Additionally, the desire to be together and the complexity of the relationship may lead students to perceive that face-to-face communication is the most effective medium in intimate relationships.

Results for convenience indicate IM to be the most convenient form of communication for these participants. This finding correlates with the results from the focus groups which suggested that one of the major reasons IM is so popular among undergraduates is how convenient IM is for students since they have so much access to

computers. The findings could also be a result of today's generation of college students having grown up with computers, and who therefore may find computers to be a convenient form of communication. Additionally, many college students today have personal computers or access to computers that would make IM convenient to use.

Findings for ease of use, though less definitive, suggest that IM is ranked after face-to-face as the easiest-to-use form of communication. These findings can also be attributed to undergraduates' easy access to computers and their frequent use of computers for academic reasons. As previously stated, personal computers have been available for all of this generation of college students' lives. Many students have had access to computers since they were very young and therefore feel comfortable using them.

The findings also suggest that in addition to student perception of IM as both convenient and easy to use, students may use IM because it is less confrontational than other media. Focus group participants indicated that they say things on IM they normally would not say in person or over the phone, including flirting. One explanation for this behavior could be that participants feel safer not being in the presence of the people with whom they are communicating. Therefore participants may feel less embarrassed or awkward by the change in behavior. Participants may also feel more relaxed with a computer as a buffer zone between the two people having the conversation than being in the presence of one another. However, IM use along with an increase in use of other media may lead to reduced communication effectiveness. Hence, instead of helping to make communication faster and more convenient, IM could ultimately be hindering the growth of college students' social skills and impairing their ability to communicate

effectively. In fact with such a large percentage of participants indicating high IM-use, this generation of college students may already be witnessing the effects of Instant Messenger and communication skills. Such a deficiency may make students more reliant on such media as IM and email to effectively communicate, thus deteriorating their skills.

Daily Living Habits

Participants agreed that college students use IM excessively. This finding illustrates that students realize their excessive use yet still do not correlate high IM use with increased distraction and decreased productivity. College students may not yet understand that excessive use of anything can potentially be harmful nor have enough real life experience to understand that “too much of a good thing” can have potential drawbacks.

Participants also agree that IM has created a subculture of student IM-users. One explanation for this finding could be that with the increased communication via IM, students feel more connection to fellow IM users. Additionally, the unique style of communication on IM brings commonality to all IM users and excludes non-users. Findings on an IM subculture may also explain the high percentage of IM use among college students. A subculture of IM users among college students may be another way for students to distinguish themselves from the general, non-college population. Undergraduates’ knowledge of and access to computers, along with their unique schedules, make them ideal candidates for high levels of IM use. One focus group participant explained, “I hardly ever use IM when I’m at home. I’ll just call someone if I want to talk to them. But when I’m at school I’m on IM all the time.” IM may be seen as a way to connect with fellow undergraduates in a non-traditional method of

communication and exclude other populations who may not use IM as frequently.

Findings suggest these students talk more with fellow students and friends than any other population (e.g., parents). Furthermore, these students may feel the need to use IM at college because it is so highly utilized by their peers.

Participants agreed IM users feel disconnected when they do not have IM access. This finding is not surprising given the high levels of IM use. Students may be so accustomed to the connection of IM that any separation makes them feel disconnected. With such high levels of use and the perceived feeling of disconnection when students do not have access to IM, it might be suggested that high student IM users are dependent on IM for communication with others.

On questions of favorability, participants agreed both that they liked and felt comfortable with Instant Messenger. Overall, participants did not think IM was a nuisance; however, low users believed IM to be more of a nuisance than high users. With such heavy IM use among undergraduates, these results are not surprising. Because of its wide use and popularity, it appears that IM is not a phase among college students.

Findings for motivation reveal that students use IM to procrastinate and when they are bored. Also, the results suggest that students regularly IM without a specific purpose. The results propose that IM is an effective way for college students to pass time and is a form of recreation. One reason why students use IM as a procrastination tool or when they are bored may be because many students are signed on to IM for so long throughout the day that it is always running on their computers. Therefore it is easy for them to check away messages, IM their buddies, and be distracted by incoming IMs.

Conclusion

Since IM is a medium most college students are exposed to each day, one cannot help but wonder what effects this exposure will have on the present generation of students. Companies may increase their advertisement time on Instant Messenger programs, such as AIM and ICQ, so they can specifically target college students. Indeed, IM programs have already realized the young demographic of users and tailor advertisements to fit the clientele (Stone, 1999).

Instant Messenger is a relatively new medium and further research is needed to examine areas such as content of profiles and away messages. Additionally, examining how this generation of college students deal with the issue of IM and the corporate world is an important avenue for future research. Interestingly, because so many participants perceived IM to be a way of gathering information and making plans, examining how information gathering has changed since the birth of IM on college campuses could help illuminate how college communities have changed in a relatively short time period.

The implications of this research suggest that colleges and universities could use IM to appeal to potential college students. IM chat times with college students could help potential college students in their college searches. The finding that IM enhances relationships with friends may also be applied to family members. Family members, knowledgeable of their college children's changing communication habits, may adopt the technology as well. Parents of college students are reported to use IM considerably less than their children who are in college, however, with the encouragement of their college children to increase IM use and with the cost benefits, parents may increase their IM use (Lenhart et al., 2001).

The most recent issue of *Psychology Today* (Kotler, 2005) found that the living habits of college students, such as binge-drinking and fast food, have devastating effects on learning and memory. The article says that this generation of college students may be “eating and drinking themselves stupid” (p. 65). In addition to this prognosis, students may also be IMing themselves distracted. With 83% of the participants logged on to IM four or more hours a day, students may be so distracted by instant messages that it may be almost impossible to get anything accomplished. IM has many benefits, including increased sense of connection, better in maintaining relationships, and possible academic benefits like gathering and sharing information among classmates who might not otherwise interact. However, excess use of IM may reduce productivity and cause too much distraction for students to perform well in their classes. Similar to drinking and fast food, too much Instant Messenger can be harmful for students’ undergraduate experience.

The promotion of “portion control” for IM among college students could be the new key to success for the undergraduate experience. By cutting back on the amount of time students actually spend logged onto an instant messaging service, undergraduates could still maintain relationships and feel connected yet also cut down on the amount of distractions and loss of productivity that participants associated with high levels of IM use. Students could essentially still have the best of both worlds. “Portion control” when it comes to IM could also increase the quality of IMing occurring on college campuses. Since students would limit the amount of time spent on IM, they would likely want to maximize the quality and outcome of their IMs. Therefore, IMs may become a more powerful tool for sharing and expressing emotion, gathering information, and maintaining relationships. Plus, students would have fewer distractions and be able to work more

diligently on their academics. “Portion control” of IM would allow students to spend less time on academics because of increased productivity. Instant Messenger could be seen as a technology that aids students’ connectedness, instead of an unneeded distraction that cuts down on other forms of communication.

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Table 1.

Primary Media for Communication

Relationship Pairing	t	df	Significance (p)
Classmates – Family	-21.138	282	.000*
Classmates – Cyber Friends	-6.155	277	.000*
Classmates – Significant Others	-16.551	280	.000*
Classmates - Friends	-4.760	281	.000*
Family – Cyber Friends	14.285	277	.000*
Family – Significant Others	5.506	280	.000*
Family - Friends	16.971	281	.000*
Cyber Friends – Significant Others	-9.786	276	.000*
Cyber Friends - Friends	2.303	276	.022*

In what relationships(s) is Instant Messenger used as the primary form of communication? *p < .05.

Table 2.

Sharing and Expressing Emotion

Relationship Pairing	t	df	Significance (p)
Phone – Face-to-face	-16.769	285	.000*
Phone – Email	18.198	285	.000*
Phone - Written	18.566	285	.000*
Phone – Instant Messenger	14.681	285	.000*
Face-to-face - Email	21.750	284	.000*
Face-to-face - Written	24.816	284	.000*
Face-to-face – Instant Messenger	19.029	284	.000*
Email - Written	-3.023	284	.003*
Email – Instant Messenger	-4.409	284	.000*
Written – Instant Messenger	-.795	284	.427

Rank order the effectiveness of the five forms of communication for sharing and expressing emotion. * $p < .05$.

Table 3.

Gathering and Sharing Information

Relationship Pairing	t	df	Significance (p)
Phone – Face-to-face	-9.073	279	.000*
Phone – Email	-3.333	279	.001*
Phone - Written	10.331	277	.000*
Phone – Instant Messenger	-3.119	278	.002*
Face-to-face - Email	3.531	279	.000*
Face-to-face - Written	15.438	277	.000*
Face-to-face – Instant Messenger	4.149	278	.000*
Email - Written	13.273	277	.000*
Email – Instant Messenger	.655	278	.507
Written – Instant Messenger	-11.385	276	.000*

Rank order the effectiveness of five forms of communication for gathering and sharing information. * $p < .05$.

Table 4.

Communication in Intimate Relationships

Relationship Pairing	t	df	Significance (p)
Phone – Face-to-face	-6.353	282	.000*
Phone – Email	6.781	281	.000*
Phone - Written	6.338	281	.000*
Phone – Instant Messenger	5.782	281	.000*
Face-to-face - Email	7.217	281	.000*
Face-to-face - Written	7.090	281	.000*
Face-to-face – Instant Messenger	6.593	281	.000*
Email - Written	-1.317	280	.189
Email – Instant Messenger	-2.195	280	.029*
Written – Instant Messenger	-.845	280	.399

Rank order the effectiveness of the five forms of communication for intimate relationships. * $p < .05$.

Table 5.

Convenience

Relationship Pairing	t	df	Significance (p)
Phone – Face-to-face	1.798	279	.073
Phone – Email	.821	279	.412
Phone - Written	2.283	276	.023*
Phone – Instant Messenger	-2.022	278	.044*
Face-to-face - Email	-.930	279	.353
Face-to-face - Written	1.448	276	.149
Face-to-face – Instant Messenger	-2.635	278	.009*
Email - Written	1.811	276	.071
Email – Instant Messenger	-2.737	278	.007*
Written – Instant Messenger	-2.571	276	.011*

Based on their convenience, rank order the five forms of communication. * $p < .05$.

Table 6.

Ease of Use

Relationship Pairing	t	df	Significance (p)
Phone – Face-to-face	-.870	275	.385
Phone – Email	1.623	275	.016*
Phone – Written	1.254	274	.211
Phone – Instant Messenger	-.536	274	.592
Face-to-face – Email	1.851	275	.065
Face-to-face – Written	1.653	274	.100
Face-to-face – Instant Messenger	.224	274	.823
Email – Written	.091	274	.928
Email – Instant Messenger	-2.165	274	.031*
Written – Instant Messenger	-1.267	273	.206

Based on their ease of use, rank order the five forms of communication. *p < .05.

Appendix A

Focus Group Questions

I. Orientation Questions

How would you classify your use of IM (light, moderate, or heavy)?
 How many of you are signed-on to IM at a computer right now?
 What roles do you believe IM plays on college campuses?
 Is IM a good thing or a bad thing?

II. Academics

- A. Do you think IM affects academics on this campus?
 -If so, in what ways (for better, worse, etc.?)
- B. What do you think about using IM while studying?
 -Is it distracting?
- C. Do you think IM is beneficial for academics? (for instance, because it allows you to “talk” on IM and study)
- D. Are there any drawbacks to using IM on college campuses?
- E. Overall, do you think IM affects academic productivity?

III. Relationships

- A. What do you think is the most often used form of communication students use on campus?
- B. On this campus, do you think IM affect relationships between friends? How so?
 -With family
 -Friends from other places
 -with intimate partners
 -Do you think IM is good for intimate partners (boyfriend girlfriend)?
- C. Do you think IM is beneficial for social relationships?
- D. Do you think IM helps to create more of a social environment on campus?

IV. Motivation

- A. What do you think are the reasons IM is used on this campus? (boredom, procrastination, just to chat, academic use, etc.)
- B. Do students leave their IM on while studying?
 If so, why?
 -Do you think they want to be distracted/connected/get help?
- C. Do you think IM improves, stays the same, or hinders motivation to be active or involved??
- D. Do you think IM makes college students lazy?

V. Recreation

- A. Is IM itself a form of recreation?
If so, how?
- B. Do you use IM just as something to do sometimes?
- C. Do you use IM in place of doing other things?
- D. Is IM a healthy form of recreation?

VI. Daily living habits

- A. Do you think IM makes students more tied to their computers?
- B. Do you think IM makes students more likely to do homework at/by a computer?
- C. In your daily life, how dependent are you on your computer?
- D. In your daily life, how dependent are you on IM?
- E. Lets talk a little bit about away messages. Do you have one up now? Is it standard or yours creation or highly detailed?
- F. What do you think of students who put their daily schedules on their away messages?
-how you think most students feel if their away messages are inaccurate? (Do they care? Worry?) How do you feel?
- G. How do you feel about putting personal information on away messages or IM profiles?
- H. How much personal information is on your profile?

Overall, do you think IM is a beneficial for college campuses?

Is there anything about IM that I haven't covered?

Focus Group Consent Form

Thank you for your interest in this research project. Please read the following information about the study. The purpose of this study is to learn more about the role of Instant Messenger in the undergraduate experience. Your participation in this project involves being a member of a focus group discussion on Instant Messenger and undergraduates. The focus group leader will ask a series of questions to a group of undergraduates. Your answers and opinions are invaluable to this research project. The focus group should last approximately sixty minutes.

Your participation in this project is voluntary and you are free to withdraw your consent and discontinue participation in the project at any time without penalty. Neither your name nor any information about you (such as email address, ID, etc.) will be connected with any of your comments during the focus group.

The principal investigator is Kimberly Schaefer (662-4087, kimberly.schaefer@richmond.edu) and she is being supervised by Dr. Scott Johnson (287-6698, sjohnson@richmond.edu). Should you have any questions or concerns, please feel free to contact either of us. If you have any questions concerning your rights as a research subject, you may contact the Chair of the University of Richmond Institutional Review Board for the Protection of Research Participants at 289-8417 for information or assistance.

If you have read the above information and consent to participate, please sign:

I _____ have read the above information and consent to participate in this study.

Date _____

Appendix B

Student Survey

Sex (select one): ☐ Male ☐ Female

Age:

Majors: First Second

Minors:: First Second

G.P.A.:

I am an (select one): ☐ IM user ☐ IM non-user

How long are you typically signed on to Instant Messenger each day (select one)?

- ☐ 0 hours per day
- ☐ 0-2 hours per day
- ☐ 2-4 hours per day
- ☐ 4 or more hours per day

On average, how many people do you typically receive IMs from in one day (select one)?

- ☐ 0
- ☐ 1-4
- ☐ 5 -10
- ☐ 11 or more

On average, how many people do you IM in one day (select one)?

- ☐ 0
- ☐ 1-4
- ☐ 5 -10
- ☐ 11 or more

Number of IM screen names you have

1. Based on your own experiences, rank order these groups based on what you believe to be the least frequent to the most frequent group IMed by undergraduates.

Rank 1-5 (using each number only once)

(1 = least frequent, 5 = most frequent)

- Classmates
- Friends
- Cyber friends
- Boyfriends/girlfriends
- Family members

Answer the following questions by selecting the box that best represents your current feelings and opinions.

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)
2. I think IM makes students less productive with schoolwork.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I believe having IM on while studying is a distraction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I believe productivity levels do not drop when IM is on during studying time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I feel IM benefits academic communities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I believe the more time a student spends on IM, the lower the student's G.P.A. is likely to be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I feel students accomplish more while on IM because IM allows them to do more than one thing at a time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I think IM is valuable for academic use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I believe students use IM to get information about class from other students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I think IM users sometimes have difficulty understanding IM messages because of the lack of verbal and non-verbal cues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I think IM strengthens most social relationships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>12. I believe the use of IM is healthy for most intimate relationships.</p>	○	○	○	○	○
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13. Based on your own experiences, rank order the effectiveness of the following types of communication for sharing and expressing emotion.
Rank 1-5 (using each number only once)
 (1 = least effective, 5 = most effective)

▼

 Phone

▼

 Face-to-face

▼

 Email

▼

 Written

▼

 Instant Messenger

14. Based on your own experiences, rank order the effectiveness of the following types of communication for gathering and sharing information.
Rank 1-5 (using each number only once)
 (1 = least effective, 5 = most effective)

▼

 Phone

▼

 Face-to-face

▼

 Email

▼

 Written

▼

 Instant Messenger

▼

 Phone

▼

 Face-to-face

▼

 Email

▼

 Written

▼

 Instant Messenger

The following are questions about relationships and student Instant Messenger use. Please answer the questions by selecting the box that best represents your current feelings and opinions.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
16. I think students are more likely to use IM in happy situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I think students are more likely to use IM in potentially embarrassing situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I think students are more likely to use IM in potentially hurtful situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. IM is my primary means of communicating with classmates outside of the classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. IM is my primary means of communicating with family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. IM is my primary means of communicating with cyber friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. IM is my primary means of communicating with my significant other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. IM is my primary means of communicating with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I believe IM strains intimate relationships because of the lack of nonverbal cues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I think when a relationship is primarily maintained on IM, face-to-face communication is awkward.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I think IM feels safer than face-to-face communication because it is less confrontational.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I believe IM allows students to express emotions they would not normally express in face-to-face communication.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I think students are more flirtatious on IM than other forms of communication.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. I think it is just as easy to decipher meaning over IM as it is with face-to-face communication despite the absence of nonverbal cues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I think IM increases undergraduates' contact with family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I think IM increases undergraduates' contact with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I think IM enhances undergraduates' relationships with family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I think IM enhances undergraduates' relationships with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I believe student IM users are more likely to talk to friends over IM than over email.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I think IM has created a subculture of student IM users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I think student non-IM users feel "left out" because they are not on IM.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I think IM non-users do not feel as "connected."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I feel IM is the least confrontational form of communication.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

39. Based on their convenience, rank order the following types of communication.
Rank 1-5 (using each number only once)
(1 = least convenient, 5 = most convenient)

Phone

Face-to-face

Email

Written

Instant Messenger

40. Rank order the following types of communication based on how easy they are to use.
Rank 1-5 (using each number only once)
(1 = least easy to use, 5 = most easy to use)

Phone

Face-to-face

<input type="checkbox"/>	Email					
<input type="checkbox"/>	Written					
<input type="checkbox"/>	Instant Messenger					
<p>The following questions regard daily living habits and students' use of Instant Messenger. Please answer the questions by selecting the box that best represents your current feelings and opinions.</p>						
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
41. I think IM users put personal information on their IM profiles to look popular.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. I think students are <u>less</u> comfortable with self-disclosure over IM because of the lack of verbal and non-verbal cues.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. I believe students are <u>less</u> likely to disclose important information over IM because of fears regarding privacy and/or security.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. I think IM users choose computer-based schoolwork over other types because of IM.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. I believe IM users typically have IM running while on a computer in the library.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. I think IM creates an environment where students want to study.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. I believe IM users typically get less sleep than IM non-users.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. I feel IM users typically watch more television than IM non-users.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. I feel IM cuts down on the amount of time students have to study.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. I believe IM-users leave IM running while studying because they want to be distracted by IMs.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. I feel IM users utilize IM as a form of entertainment.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. I feel students use IM when they are bored.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. I think IM is frequently used as a procrastination tool.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

54. I believe IM takes the place of other recreational activities for some IM users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. I think students who play videogames are more likely to be IM users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. I think IM users typically IM just to “chat” without a specific purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. I believe IM users check away messages even when they do not plan to IM anyone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. I think IM users check IM profiles often.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. Overall, I think the average undergraduate uses IM excessively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. I believe that IM users put their daily schedules on their away messages to look important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. I think IM users put their daily schedules on their away messages to let others know what they are doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. I believe IM users frequently reference their buddies’ profiles to get personal information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. I think IM users feel disconnected when they do not have access to IM.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. I think IM users typically sign on to IM when they first start up their computers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65. I believe IM users feel that “Big Brother” is watching them on IM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. I believe most IM users typically do not like the time lapse between IMs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. I think IM users worry if their IM away messages are inaccurate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. I think IM would be an effective way to stalk others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. I think some IM users do not put personal information on their IM profiles because they do not want people to know their personal information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. I believe women use IM more than men.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71. I like Instant Messenger.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

72. I am not comfortable using Instant Messenger.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
73. I think IM is a nuisance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I was on IM while completing this survey ☐ Yes ☐ No

Thank you very much for your participation in this survey.

<input type="button" value="Submit"/>	<input type="button" value="Reset"/>
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Email Requesting Participation

Hello! As an undergraduate at the University of Richmond, you have been randomly selected to participate in a student's research study about Instant Messenger and the undergraduate experience. Research is an important way we learn more about Instant Messenger and its effect on undergraduates, and your input in this project is valuable toward increasing understanding. We would like for you to complete an online questionnaire that should take about 15 minutes and can be accessed through the link at the bottom of this email. Neither your name nor your email address will be connected in any way to your answers to the questionnaire, and no identifying information (name, email, ID, etc.) will be known by the researchers.

If you agree to participate or learn more about the study, please click on the link below that will take you to a website with the questionnaire and information about it. The questionnaire will be available to complete for the next 8 days. If you have any questions about this research project, you can contact the researcher, Kimberly Schaefer (662-4087, kimberly.schaefer@richmond.edu), or her faculty advisor, Dr. Scott Johnson (287-6698, sjohnson@richmond.edu). I hope you will take a few minutes to participate in this study. Your participation will help us understand these issues in important new ways.

Thank you for your consideration.

CLICK HERE.

Follow-Up Email After Four Days

Hello! You were randomly selected a week ago to participate in a study about Instant Messenger. If you have already completed the online questionnaire, thank you for your participation.

If you have not yet completed the questionnaire, you have four more days to do so. We would like for you to complete the online questionnaire that should take about 15 minutes and can be accessed through the link at the bottom of this email. Neither your name nor your email address will be connected in any way to your answers to the questionnaire, and no identifying information (name, email, ID, etc.) will be known by the researchers.

If you agree to participate or if you wish to learn more about the study, please click on the link below that will take you to a website with the questionnaire and information about it. If you have any questions about this research project, you can contact the researcher, Kimberly Schaefer (662-4087, kimberly.schaefer@richmond.edu), or Dr. Scott Johnson (287-6698, sjohnson@richmond.edu).

Thank you for your consideration.

CLICK HERE.